RoadMap
Agricultural Efficiency

	Unfunded
	Funded
	Decision Support Tool

EARTH SCIENCE RESEARCH   **DECISION SUPPORT INPUTS**   **GOALS**

Enhanced Decision Support

State 2 Enhanced DSS (CADRE) integrating new generation image products, precip. data, and crop models for more accurate crop production assessments

Transition to NPOESS with cross calibration to legacy systems. Integr ed system t ingest data fr y of c high-resolution systems.

Outcomes: Better information on hot spots

Impacts: Long-term operational sustainability that exploits all available systems

Enhanced operational decision support system for prediction and monitoring of agricultural production.

Transition to VIIRS/NPP, and other new data sources as they come on-line. Integrate data into operational systems. Benchmark new capabilities.

Outcomes: New tools to exploit enhanced capability for region-specific modeling and prediction. Ability to compare new data to archive

Impacts: More accurate crop assessments based on new operational capabilities

Evaluate, via data simulations, new data sources (OCO, Aquarius, HYDROS) on predictive capabilities and production estimates.

Outcomes: New tools for analysts to exploit enhanced system capability for region-specific modeling and prediction

Impacts: More accurate production estimates

New MODIS-based vegetation, envapotranspiration, and TRMM products for CADRE database and crop models

Outcomes: New tools for analysts to exploit enhanced system capability for region-specific modeling and prediction

Impacts: More accurate and timely drought monitoring. Enhanced prediction of yield

Rapid Response Delivery system for daily MODIS products. Reservoir stage products.

Outcomes: New source of data available to analysts offering unprecedented spatial, spectral, and temporal coverage

Impacts: More accurate acreage and production assessments. Earlier detection of potential problem areas

State 1 CADRE: DSS that integrates Landsat & AVHRR with limited crop models and coarse gridded weather data

NOAA   USDA

EARTH OBSERVING MISSIONS

TOPEX	TRMM	Landsat 5,7	Terra	Jason-1	Aqua	NPP	OCO	Aquarius	GPM	HYDROS	NPOESS

2003	2005	2007	2009	2011	2013

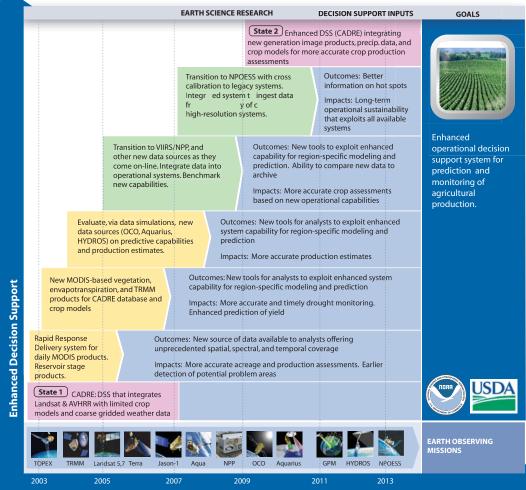
Where we are now

The agricultural efficiency national application is integrating NASA Earth science observations into decision support tools used by the Foreign Agriculture Service of the U.S. Department of Agriculture. These tools contribute to the production and yield estimates issued by the World Agricultural Outlook Board for major global agricultural commodities. The tools also improve the timeliness and accuracy of FAS reports on disruption in agricultural productivity due to floods, fires and other natural phenomena.

Where we plan to be

The decision support systems of FAS and other agencies with mandates to report on, and predict, agricultural condition will be enhanced through the incorporation of new data sets from NASA systematic and experimental missions. Observations from Terra, Aqua, NPP and NPOESS, will enhance climate and weather predictions. Observations from HYDROS, GPM, OCO and Aquarius will provide insights on geophysical parameters not presently observed or not observed with sufficient resolution. Those observations will drive predictive models that will incorporate information on soil moisture, rainfall, carbon fluxes and sea surface salinity into better estimates of climate impact.

2004 ——————————— 2012